

SEVENTEEN NEW SPECIES OF *CASTIARINA* (COLEOPTERA: BUPRESTIDAE),

by S. BARKER*

Summary

BARKER, S. (1996) Seventeen new species of *Castiarina* (Coleoptera: Buprestidae). *Trans. R. Soc. S. Aust.* 120(2): 41-59, 31 May, 1996.

Seventeen new species of *Castiarina* namely *C. adusta* sp. nov., *C. antarctica* sp. nov., *C. aura* sp. nov., *C. azurea* sp. nov., *C. charientessa* sp. nov., *C. darani* sp. nov., *C. demarzi* sp. nov., *C. enigma* sp. nov., *C. ferruginea* sp. nov., *C. hemizostera* sp. nov., *C. jachhasenpuschi* sp. nov., *C. nonyma* sp. nov., *C. nullarborica* sp. nov., *C. paulhasenpuschi* sp. nov., *C. phaeopus* sp. nov., *C. subcincta* sp. nov., *C. ustulata* sp. nov., are described and three established species namely *C. cincta* (Blackburn), *C. femorata* (LaPorte & Gory), *C. octospilota* (LaPorte & Gory) are redescribed.

KEY WORDS: Coleoptera, Buprestidae, new species, *Castiarina*.

Introduction

The genus *Castiarina* (LaPorte & Gory) (Coleoptera: Buprestidae) is widely distributed in Australia and also occurs in New Guinea where its distribution and abundance are virtually unknown. The adults are often found on the flowers of native Myrtaceae species and the larvae which are root and stem feeders are largely unknown. Although twenty two new Australian species have been identified recently (Barker 1993, 1995) a further close examination of material collected over many years has revealed even more new species. Ten of these are associated with the *Castiarina parallela* (White) complex and all occur only in WA; two are associated with *C. octospilota* (LaPorte & Gory) and one each of these occurs only in NSW and WA. The specific status of a further species in this complex *C. femorata* (LaPorte & Gory) is restored from synonymy; this species also occurs in NSW. Five new species belonging to neither of these complexes are described from recently collected material.

The complex in WA has previously been misidentified as *C. parallela* (White) but in fact this species occurs only in the eastern states. All members of the group are elongate and have dark pronotum and elytral colours, most often rusty-brown but dark blue in two species, a yellow margin and a single row of yellow spots along the middle of each elytron with a maximum of four in each row and minimally one, when all of the spots are fused. All species in the complex have a dense layer of silver, flattened, feathery hair lining the entire ventral surface and encroaching on to the lateral surfaces of the pronotum. This distinguishes them from all other *Castiarina* which have thin, round hair on the ventral surface. Most of the new species

also have sculptured proctigera in both sexes and this feature is unique among *Castiarina* as all species outside this complex have rounded, unsculptured proctigera. The two species previously described from the complex in WA are *C. crocicolor* (LaPorte & Gory) and *C. octopunctata* (Barker 1995). Because this is the most difficult group of *Castiarina* to identify, I have included a key to the twelve known WA species.

C. octospilota (LaPorte & Gory) has a dark head with a yellow frontal spot, dark pronotum with yellow lateral margins and dark elytral markings with yellow spots. The ventral surface is yellow with blue sutural markings and blue legs. A species occurring on the eastern edge of the Darling Scarp, WA and on the coastal plains has long been misidentified as *C. octospilota*. It resembles *C. cincta* (Blackburn) which occurs inland but is easily distinguished by differences in colour, being blue and yellow with blue legs whilst *C. cincta* has some red markings on the elytra and red legs with red sutural markings. The aedeagi are different. There appear to be two species, *C. cincta* which is redescribed and a new species which is described.

None of the remaining five species is close to each other and all are distinctive. They have all been collected recently, one of them by use of a lure, a technique not used before for the capture of *Castiarina*.

Materials and Methods

Male genitalia were prepared and illustrated by the method described by Barker (1987). The holotype is illustrated in all new species except one in which the allotype is illustrated. Measurements given are mean total body length and width with standard error, except where there are insufficient specimens to make the last calculation. Codens used in the text for museum and private collections following the four letter system of

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Watt (1979) and Arnett *et al.* (1993) are: ANIC: Australian National Insect Collection, Canberra; BMNH: British Museum (Natural History), London; MNHN: Museum Nationale Histoire Naturelle, Paris; NMVA: National Museum of Victoria, Melbourne; SAMA: South Australian Museum, Adelaide; WAMA: Western Australian Museum, Perth; HDWA Mr H. Demarz, Guilderton; JHQA: Mr J Hasenpusch, Innisfail; MHSA: Mr T. M. S. Hanlon, Sydney; MPWA: Mr M. Powell, Melville.

Castiarina femorata (LaPorte & Gory) 1838
(FIGS 1B, 2B)

Stigmodera femorata LaPorte & Gory 1838: 37, Pl. 8, Fig. 42.

Stigmodera (Castiarina) octospilota var. *roseipes* Deuquet, 1956 (new syn.).

Holotype: Sex unknown, *S. femorata* LaPorte & Gory, Aust. MNHN (not seen)

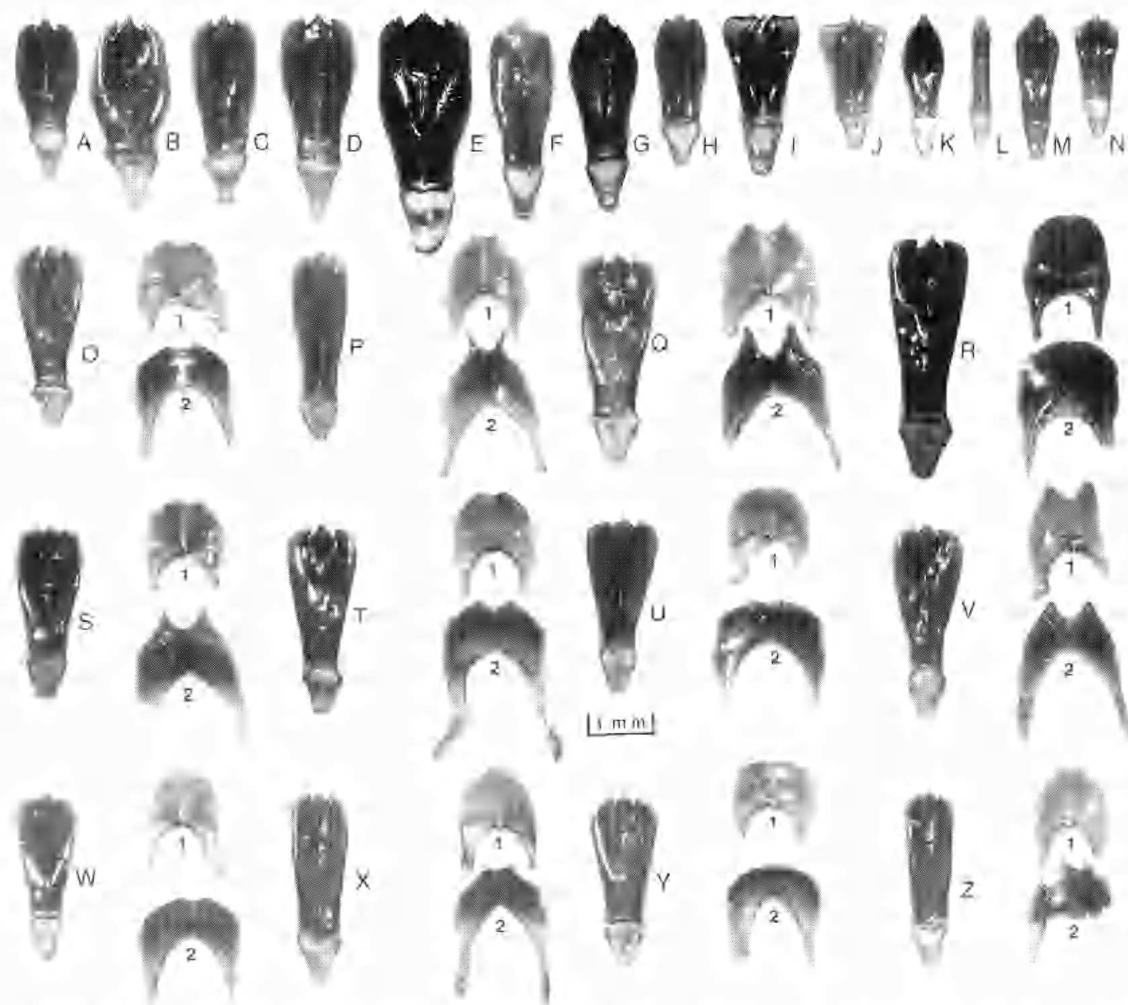


Fig. 1. Photomicrographs of aedeagi and male and female proctigera of the following *Castiarina* species. A. *Castiarina daranj* sp. nov. B. *C. femorata* (L & G). C. *C. cincta* (Blackburn). D. *C. subcincta* sp. nov. E. *C. octospilota* (L & G). F. *C. paulhasenpuschi* sp. nov. G. *C. bucolica* (Kerremans). H. *C. demarzi* sp. nov. I. *C. placida* (Thomson). J. *C. nullarborica* sp. nov. K. *C. cydista* (Rainbow). L. *C. jackhasenpuschi* sp. nov. M. *C. aglaia* Barker. N. *C. hemizostera* sp. nov. O. *C. antarctica* sp. nov. 1. proctiger male. 2. proctiger female. P. *C. octopunctata* Barker. 1. proctiger male. 2. proctiger female. Q. *C. ferruginea* sp. nov. 1. proctiger male. 2. proctiger female. R. *C. adusta* sp. nov. 1. proctiger male. 2. proctiger female. S. *C. aura* sp. nov. 1. proctiger male. 2. proctiger female. T. *C. charientessa* sp. nov. 1. proctiger male. 2. proctiger female. U. *C. azurea* sp. nov. 1. proctiger male. 2. proctiger female. V. *C. ustulata* sp. nov. 1. proctiger male. 2. proctiger female. W. *C. phaeopus* sp. nov. 1. proctiger male. 2. proctiger female. X. *C. nonyma* sp. nov. 1. proctiger male. 2. proctiger female. Y. *C. enigma* sp. nov. 1. proctiger male. 2. proctiger female. Z. *C. crocicolor* (L & G). 1. proctiger male. 2. proctiger female.

Colour

Head dark blue with green and purple reflections, elongate yellow frontal spot, muzzle blue. Antennae blue. Pronotum dark blue with yellow lateral margins width increasing basally. Scutellum dark blue. Elytra yellow with following dark blue markings: narrow basal margin, elongate sinuous vitta on each side meeting basal margin over humeral callus, meeting post-medial fascia at margin enclosing spot on margin, apical mark enclosing elongate yellow mark between it and post-medial fascia, small yellow apical spot on each side of suture, marks all connected along suture. Ventral surface yellow with testaceous-red sutures and testaceous-red edges to abdominal segments, except S_7 . Legs: coxae and trochanters testaceous-red and dark blue; femora mainly testaceous-red, apically dark blue; tibiae a dark blue with ventral testaceous-red mark near ventral apex; tarsi blue. Hairs silver.

Shape and sculpture

Head shallowly punctured, median sulcus narrow, muzzle short. Antennomeres 1-3 obconic, 4 half-toothed, 5-II toothed. Pronotum shallowly punctured, apical margin straight, basal margin barely bisinuate,

median basal fovea projecting almost to middle as glabrous line; laterally parallel-sided at base, rounded to apex. Scutellum scutiform, unpunctured. Elytra punctate-striate, intervals convex, more so apically than basally, lightly punctured; laterally angled outwards from base, rounded at humeral callus, rounded post-medially and narrowed to trispinose apex, marginal spine small, interval to small median spine straight, margin rounded and indented to small sutural spine; apices slightly divergent. Ventral surface shallowly punctured, edges of abdominal segments glabrous, elsewhere with sparse long hair, S_7 : male rounded; female round, indented medially.

Size

Males, $12.4 \pm 0.35 \times 4.9 \pm 0.14$ mm (20). Females, $13.4 \pm 0.22 \times 5.5 \pm 0.09$ mm (5).

Aedeagus (Fig. 1B)

Parameres angled outwards from basal piece, rounded premedially then narrowed, rounded apically. Penis sharp, sides acutely angled away. Hypophysis of basal piece medium width, apices rounded.

Distribution

NSW: Armidale district, central coastal.

Remarks

This species was synonymised with *C. octospilota* by Saunders (1868) who was followed by all subsequent authors. Deuquet (1956) gave the varietal name *roseipes* to a specimen he identified as *S. octospilota*. A single male specimen in the South Australian Museum identified as *Stig.8-spilota* L. & G. var. *roseipes* Deuq. in Deuquet's handwriting, is clearly a separate species from *C. octospilota*. The holotypes of *C. octospilota* and *C. femorata* are both lodged in the MNHN but cannot be identified because their labels, along with those of all other LaPorte & Gory type labels, have been removed. Deuquet's description of the red femora and red vermiculation on the ventral surface of his *S. octospilota* var. *roseipes* concurs with the original description of *S. femorata*. The figure of *S. femorata* (LaPorte & Gory 1838, Pl. 8, Fig. 42) also conforms in general, except that the illustration shows the base of the head to be yellow instead of the yellow frontal spot in the Deuquet specimen. I assume that this is artistic licence on the part of the illustrator because none of the species in this species group has a head with a yellow base. In the figure the pre-medial fascia is complete. A similar pattern is present in only two of the fourteen specimens examined. All other specimens have the pre-medial fascia incomplete; thus two spots on each side of the suture coalesce to form a sinuous yellow vitta. *S. octospilota* var. *roseipes* Deuquet is undoubtedly a synonym of *C. femorata* (L. & G.).

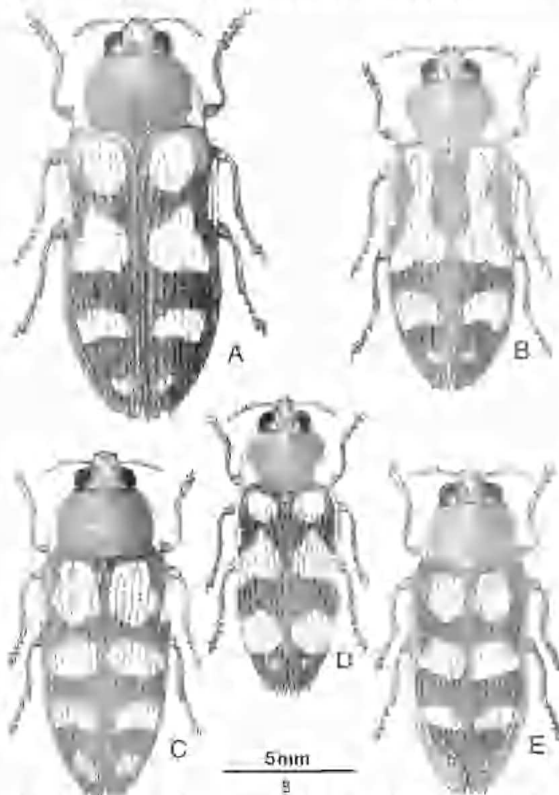


Fig. 2. Habitus illustrations of the following *Castiarina* species. A. *Castiarina octospilota* (L. & G.), B. *C. femorata* (L. & G.), C. *C. subcineta* sp. nov. holotype. D. *C. daranj* sp. nov. holotype. E. *C. cineta* (Blackburn).

Castiarina octospilota (LaPorte & Gory)
(FIGS 1E, 2A)

Stigmodera octospilota LaPorte & Gory 1838: 28, Fig. 29, Pl. 6.

Holotype: Sex unknown, Australia, MNHN (not seen).

Colour

Head: muzzle blue; base dull green-purple; yellow frontal mark. Antennae blue. Pronotum: medially dull green-purple; laterally yellow, base wider than apex. Scutellum black with dark blue reflections. Elytra yellow with following dark blue markings: narrow basal margin, small and narrow pre-medial fascia absent in many specimens, connected to long oblique vitta from lower end reaching lateral margin, enclosing very large basal yellow spot and smaller one on margin; broad post-medial fascia reaching lateral margin, slightly angled posteriorly, enclosing large yellow mark between it and first fascia; mark covering whole apex, enclosing small yellow mark between it and second fascia. Ventral surface yellow with blue sutures. Legs blue. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus small, muzzle short. Antennomeres 1-3 obconic, 4 half-toothed, 5-II toothed. Pronotum closely punctured, minute basal fovea extending forwards to middle as glabrous line, basal notches represented by glabrous areas, more marginal than medial; apical margin straight, basal margin bisinuate; laterally rounded out from base, widest pre-medially, rounded and narrowed to apex. Scutellum scutiform, glabrous, excavate at basal edge. Elytra punctate-striate, intervals convex and punctured, less so medially than elsewhere; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to trispinose apex; small marginal and medial spines, margin between straight, widely separated, small sutural spine, close to medial spine, apices divergent. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere moderately hairy, hairs medium length. S_7 truncate and indented medially in both sexes.

Size

Males, $12.5 \pm 0.28 \times 5.1 \pm 0.20$ mm (33). Females, $13.6 \pm 0.23 \times 5.6 \pm 0.11$ mm (40).

Aedeagus (Fig. 1E)

Parameres angled outwards from basal piece, rounded pre-medially, parallel-sided, rounded at apex. Penis sharp, sides obtusely angled away. Apophysis of basal piece medium width, apically rounded.

Distribution

NSW: Blue Mts, Sydney, central to north coastal. Qld: Southern and central coastal, Blackdown Tableland, Shrove Is.

Castiarina cincta (Blackburn) 1890
(FIGS 1C, 2E)

Stigmodera cincta Blackburn 1890: 13, 157 (replacement name for *S. rubrocincta* Kerremans 1890: 46, primary homonym *S. rubrocincta* Gehin 1855).

Holotype: ♀, *S. rubrocincta* Kerremans, Boucard, Australia. BMNH.

Colour

Head: muzzle blue-green; base purple-green; large yellow frontal mark. Antennae blue-green. Pronotum laterally yellow, medially purple-green. Scutellum blue. Elytra yellow with the following dark blue markings: basal margin; pre-medial fascia not reaching margin with ends projecting anteriorly to basal margin as vitta enclosing large yellow basal spot, elongate yellow mark on margin at humeral callus, narrow red apical margin; post-medial fascia not reaching margin, enclosing yellow band between it and first fascia; pre-apical mark in shape of short fascia enclosing elongate yellow band between it and second fascia, all marks connected along suture. Lateral red margin on the two intervals from humeral callus, broader at pre-apex and apex. Ventral surface yellow; sternum lateral blue-green sutural marks, red medially and along edges of abdominal segments. Legs: femora blue-green apically, red medially, tibiae and tarsomeres blue-green. Hairs silver.

Shape and sculpture

Head with shallow punctures, flat, muzzle short. Antennomeres 1-3 obconic, 4 half-toothed, 5-II toothed. Pronotum with shallow punctures, basal fovea represented by shallow depression, very small basal notches more marginal than medial; apical margin straight, basal margin almost straight. Scutellum scutiform, without punctures, excavate along basal edge. Elytra punctate-striate, intervals flat medially, convex apically and laterally, punctured, less so medially; laterally angled out slightly from base, rounded at humeral callus, concave, rounded post-medially and narrowed to trispinose apex; marginal spine small and sharp, median spine larger and blunt, sutural spine small and sharp, margin rounded between spines. Ventral surface with shallow punctures, sparse short hair, S_7 truncate both sexes.

Size

Males, $11.3 \pm 0.22 \times 4.3 \pm 0.10$ mm (24). Females, $12.2 \pm 0.34 \times 4.7 \pm 0.15$ mm (20).

Aedeagus (Fig. 1C)

Parameres angled outwards from basal piece, rounded pre-medially then angled outwards, rounded apically. Penis sharp, sides acutely angled away. Hypophysis of basal piece narrow, apically rounded.

Distribution

Occurs in inland south-western WA.

***Castiarina daranj* sp. nov.**
(FIGS 1A, 2D)

Holotype: ♂, 4 km NE Rocky Glen, NSW, 3.xi.1981, S. Barker, SAMA I 21 300.

Allotype: ♀, same data as holotype, SAMA I 21 301.

Paratypes: NSW: 1 ♀, 43 km S Narrabri, 27.x.1975, S. Barker, SAMA; 14 ♂♂, 8 ♀♀, Binnaway, 2.xi.1981, S. Barker, SAMA; 1 ♀, 6 km SW Rocky Glen, 3.xi.1981, S. Barker, SAMA; 2 ♂♂, 2 ♀♀, 4 km SW Rocky Glen, 3.xi.1981, S. Barker, SAMA; 1 ♂, 1 ♀, 2 km SW Rocky Glen, 3.xi.1981, S. Barker, SAMA; 5 ♂♂, 4 ♀♀, same data as holotype, SAMA; 2 ♂♂, 2 ♀♀, Garrawilla T.O. 6 km NE Rocky Glen, 3.xi.1981, S. Barker, SAMA; 2 ♀♀, Garrawilla T.O., 8.xi.1981, R. Anderson, SAMA; 1 ♀, Garrawilla T.O., 12.xi.1981, S. Barker, SAMA; 1 ♂, 6 km NE Coonabarrabran, 6.xi.1983, A. M. Sundholm, MHSA; 3 ♂♂, 1 ♀, 40 km E Coonabarrabran, 9.xi.1990, T. M. S. Hanlon, MHSA; 1 ♂, 60 km N Coonabarrabran, 9.xi.1990, T. M. S. Hanlon, MHSA; 2 ♂♂, 2 ♀♀, 40 km E Coonabarrabran, 8.xi.1991, T. M. S. Hanlon, MHSA; 1 ♂, Round Hill, 21.xi.1991, T. M. S. Hanlon, MHSA; 1 ♂, 30 km E Parkes, 29.xi.1993, T. M. S. Hanlon, MHSA.

Colour

Head black with green reflections, muzzle blue, large orange-yellow frontal spot. Antennae blue. Pronotum medially dark blue, laterally orange-yellow increasing in width basally. Scutellum dark blue. Elytra orange-yellow with the following black markings with blue reflections: narrow basal margin; sinuous vitta from basal margin over humeral callus meeting margin and sutural mark enclosing yellow-orange elongate mark on margin and basal spot; broad post-medial fascia reaching margin enclosing large orange-yellow mark between it and first mark; mark covering apex meeting post-medial fascia on margin and enclosing a large orange-yellow mark; small orange-yellow apical spot

on each side. Ventral surface orange-yellow with blue marks along sutures and along edges of abdominal segments. Legs: femora and tibiae blue; tarsi bright blue. Hairs silver.

Shape and sculpture

Head shallowly punctured, median sulcus shallow, muzzle short. Antennomeres 1-3 obconic, 4 half-toothed, 5-11 toothed. Pronotum shallowly punctured, narrow basal fovea extending forwards to middle as glabrous line; apical margin projecting medially, basal margin barely bisinuate; laterally parallel-sided at base, rounded to apex. Scutellum scutiform, glabrous, excavate. Elytra punctate-striate, intervals convex, lightly wrinkled and punctured; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to trispinose apex; spines small, margin straight between marginal and median spine, rounded between median and sutural spines, apices divergent. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere moderately hairy, sparse medium length hair. S_7 : male truncate, slightly indented medially; female truncate, deeply indented medially, margin overhanging apex which is covered with bristles.

Size

Males, $10.4 \pm 0.15 \times 4.0 \pm 0.06$ mm (34). Females, $11.1 \pm 0.20 \times 4.4 \pm 0.09$ mm (26).

Aedeagus (Fig. 1A)

Short. Parameres angled outwards from basal piece, rounded pre-medially, parallel-sided, apically rounded. Penis sharp, sides acutely angled away. Hypophysis of basal piece medium width, apically rounded.

Remarks

The basal colour of this species fades rapidly in death from orange-yellow to pale yellow. Both *C. octospilota* and *C. femorata* have a yellow basal colour in life. Also it is smaller than the other two species and the male genitalia are smaller and a different shape (Figs 1A, 1B, 1E).

Etymology

Name derived from Arabic *daranj*, orange.

***Castiarina subcincta* sp. nov.**
(Figs 1D, 2C)

Holotype: ♂, Bold Park, City Beach, WA, 3.xi.1976, R. P. McMillan, SAMA I 21 302.

Allotype: ♀, City Beach, WA, 3.xii.1955, J. A. L. Watson, SAMA I 21 303.

Paratypes: WA: 1 ♀, Cannington, 12.xii.1954, S. Barker, SAMA; 3 ♂♂, City Beach, 24.x.1954, S. Barker, SAMA; 12 ♂♂, 3 ♀♀, City Beach, 26.xi.-25.xii.1955, J. A. L. Watson, SAMA; 1 ♀, 9.5 km SW Jarrahdale, 11.xi.1956, S. Barker, SAMA; 1 ♂, City Beach, 6.xi.1957, S. Barker, SAMA; 1 ♂, City Beach, 2.x.1964, S. Barker, SAMA; 3 ♂♂, Wembly, 3.x.1970, S. Barker, SAMA; 4 ♂♂, 1 ♀, same data as holotype, SAMA; 2 ♂♂, 1 ♀, Glen Eagles, 7.i.1983, S. Barker & K. T. Richards, SAMA; 2 ♂♂, 3 ♀♀, Walyunga N.P., 4.xi.1984, T. M. S. Hanlon, MHS; 5 ♂♂, 1 ♀, Wembly, 4.xi.1985, T. M. S. Hanlon, MHS; 1 ♂, Swanbourne, 23.x.1991, T. M. S. Hanlon, MHS; 6 ♂♂, 1 ♀, Swan R., H. W. Brown, SAMA.

Colour

Head basally dark blue with green and purple reflections, muzzle blue, large yellow frontal spot. Antennae dark blue. Pronotum medially dark blue with green and purple reflections, laterally yellow. Scutellum dark blue. Elytra yellow with following black markings with blue reflections: narrow basal margin; sinuous vitta from basal margin over humeral callus meeting narrow pre-medial fascia close to margin enclosing a yellow spot on margin and large yellow basal spot; broad post-medial fascia reaching margin enclosing yellow spot between it and pre-medial fascia, mark covering apex enclosing elongate yellow mark between it and post-medial fascia and variable apical yellow spot, all marks connected along suture and along margin except at humeral callus; outer margin of apical spot variably red. Ventral surface yellow, sutures blue and lateral blue spots on S_4 , S_5 , S_6 . Legs blue. Hairs silver.

Shape and sculpture

Head shallowly punctured, median sulcus small and shallow, muzzle short. Antennomeres 1-3 obconic, 4 half-toothed, 5-II toothed. Pronotum shallowly punctured, narrow basal fovea extending forwards to middle as glabrous line, basal notches represented by glabrous area on each side closer to margin than middle; apical margin projecting medially, basal margin almost straight, laterally parallel-sided at base, rounded from base to apex. Scutellum scutiform, glabrous, flat. Elytra punctate-striate, intervals convex, wrinkled; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially, narrowed to trispinose apex; small marginal spine, larger medial spine, smaller sutural spine, margin rounded between spines, apices diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere sparse medium length hairs. S_7 truncate both sexes.

Size

Males, $12.8 \pm 0.13 \times 4.9 \pm 0.06$ mm (41). Females, $13.5 \pm 0.22 \times 5.2 \pm 0.09$ mm (24).

Aedeagus (Fig. 1D)

Parameres angled outwards from basal piece, rounded pre-medially, parallel-sided, rounded apically. Penis sharp, sides acutely angled away. Hypophysis of basal piece narrow, apically rounded.

Remarks

This species, previously confused with *C. octospilota*, forms a species pair with *C. cincta* (Blackburn). It occurs on the coastal plain of WA and on the western edge of the Darling Scarp whereas *C. cincta* occurs in the more arid inland areas of the south-west. It differs from that species having only very small red markings on the elytra and not on the legs or abdominal segments. *C. cincta* has red markings on the elytra, red femora and red sutures on the ventral surface. Also the elytral spines are more obvious in *C. subcincta* than in *C. cincta* and the male genitalia are a different shape (Figs 1C, 1D).

Etymology

The name is derived from *L. sub.*, under, *L. cinctum*, girdle.

Castiarina adusta sp. nov. (Figs 1R, 1R1, 1R2, 3J)

Holotype: ♂, 5 km W Mt Dale, WA, 13.x.1980, S. Barker, SAMA I 21 304.

Allotype: ♀, Lake Grace, WA, 19.x.1970, K. & E. Carnaby, ANIC.

Paratypes: WA: 5 ♂♂, 3 ♀♀, same data as allotype, ANIC; 1 ♀, 80 km E Hyden, 29.x.1984, M. Powell, MPWA; 1 ♂, 1 km WNW Bonnie Rock, 20.ix.1990, S. Barker, SAMA.

Colour

Head, antennae and pronotum bronze. Scutellum dark blue. Elytra yellow with the following brown markings: marks coalesced leaving a continuous yellow margin from base to near apex, a row of four elongate spots down each elytron, the first two variably connected. Ventral surface and legs bronze. Hairs silver.

Shape and sculpture

Head shallowly punctured, median sulcus shallow, sides variably glabrous basally, muzzle short. Antenno-

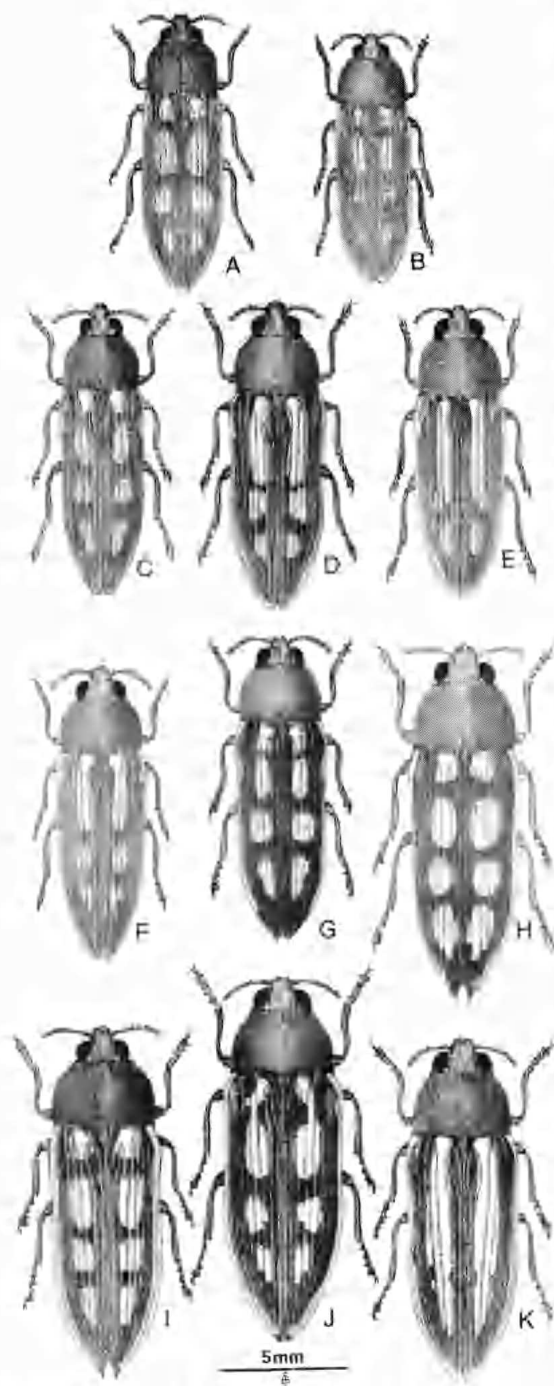


Fig. 3. Habitus illustrations of the following *Castiarina* species. A. *Castiarina nonyma* sp. nov. holotype. B. *C. crocicolor* (L & G). C. *C. enigma* sp. nov. holotype. D. *C. antarctica* sp. nov. holotype. E. *C. phaeopus* sp. nov. holotype. F. *C. ustulata* sp. nov. holotype. G. *C. azurea* sp. nov. holotype. H. *C. ferruginea* sp. nov. holotype. I. *C. aura* sp. nov. holotype. J. *C. adusta* sp. nov. holotype. K. *C. charientessa* sp. nov. holotype.

meres 1-3 obconic, 4-11 toothed. Pronotum shallowly punctured medially, larger and deeper punctures laterally, narrow basal fovea extending anteriorly to middle as glabrous line, basal notches represented by glabrous area on each side closer to margin than middle; apical margin projecting medially, basal margin barely bisinuate; laterally parallel-sided at base, rounded and narrowed to apex, laterally hairy. Scutellum scutiform, punctured, flat. Elytra punctate-striate, intervals convex, wrinkled and punctured; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to bispinose apex; spines small and blunt, margin variably rounded and indented or straight between spines, apices hardly diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere hairy, hairs flattened and feathery. Legs: femora hairy with flattened hair. S₇: males truncate; females rounded.

Size

Males, $14.5 \pm 0.12 \times 5.0 \pm 0.06$ mm (7), Females, $15.9 \pm 0.45 \times 5.4 \pm 0.12$ mm (5).

Aedeagus (Fig. 1R)

Parameres angled outwards from basal piece, rounded pre-apically then parallel-sided, rounded apically. Penis sharp, sides acutely angled away. Hypophysis of basal piece medium width, rounded apically. Proctiger, medial apical edge shallowly concave, rounded laterally (Fig. 1R1).

Female terminalia (Fig. 1R2)

Proctiger with apical edge flattened, rounded laterally.

Remarks

C. adusta sp. nov. is the largest member of this group in WA. It can be separated from *C. ferruginea* sp. nov., the next largest brownish species, by its size, the conformation of the elytral markings - there are four spots in *C. ferruginea* and three in *C. adusta*, its relatively unsculptured proctiger in both male and female, whereas both sexes of *C. ferruginea* have bilobed proctigers and in females they are spined. The aedeagus in *C. ferruginea* is broader at the apex than that of *C. adusta* (Figs 1Q, 1R).

Erymology

The name is derived from *L. adustus*, brown.

Castiarina azurea sp. nov. (FIGS 1U, 1U1, 1U2, 3G)

Holotype: ♂, 2 km E Tallering Station, Pindar, WA, 22.ix.1989, S. Barker, SAMA I 21 305.

Allotype: ♀, same data as holotype, SAMA I 21.306.

Paratypes: WA: 1♂, Goomalling, 13.ix.1953, R. P. McMillan, WAMA; 1♂, 2♀, Moorine Rock, 16.x.1953, F. H. Uther Baker, SAMA; 1♀, Wialki, 9.ix.1957, S. Barker, SAMA; 1♂, Toohbin, 18.x.1958, F. H. Uther Baker, SAMA; 2♂♂, Burracoppin, 16.x.1963, F. H. Uther Baker, WAMA; 3♂♂, 2♀, 78 km NE Wubin, 17.ix.1970, S. Barker, SAMA; 1♀, 98 km NE Wubin, 17.ix.1970, S. Barker, SAMA; 2♂♂, 1♀, 55 km S Payne's Find, 18.ix.1970, SAMA; 1♂, 1♀, 57 km S Payne's Find, 18.ix.1970, S. Barker, SAMA; 2♀, 10 km E Elachburting Rock, Wialki, 20.ix.1970, S. Barker, SAMA; 5♂♂, 2♀, Wialki, 21.ix.1970, S. Barker, SAMA; 2♂♂, 2♀, Wulgoolan, 9.ix.1971, F. H. Uther Baker, SAMA; 1♀, Talling Station, Pindar, 3.ix.1976, R. P. McMillan, SAMA; 5♂♂, 3♀, 18.9 km WSW Coolgardie, 18.ix.1976, R. J. Chinnock, SAMA; 1♂, 50 km N Kalbarri, 20.viii.1978, M. Powell, WAMA; 1♂, Balline Station, 24/25.vii.1979, A. M. & M. J. Douglas, WAMA; 1♂, 2♀, Muckinbudin, 10.x.1979, R. P. McMillan, WAMA; 1♂, 16 km E Mt Magnet, 20.ix.1980, S. Barker & D. J. Williams, SAMA; 1♂, 19 km N Carnarvon, 22.ix.1980, S. Barker & D. J. Williams, SAMA; 1♂, 2♀, 89 km N Carnarvon, 22.ix.1980, S. Barker & D. J. Williams, SAMA; 1♂, 2♀, 44 km E Kalbarri, 26.ix.1980, S. Barker & D. J. Williams, SAMA; 3♂♂, 46 km E Kalbarri, 26.ix.1980, S. Barker & D. J. Williams, SAMA; 2♂♂, 1♀, S Ram paddock, Talling Station, Pindar, 27.ix.1980, S. Barker & D. J. Williams, SAMA; 2♂♂, 1♀, 17 km W Mullewa, 29.ix.1980, S. Barker & D. J. Williams, SAMA; 2♀, Mt Walker, 23.x.1980, R. P. McMillan, WAMA; 1♀, Gabbin, 29.x.1981, R. P. McMillan, WAMA; 2♀, Southern Cross, x.1981, R. P. McMillan, WAMA; 1♂, 3♀, 2 km N Evanston, 23.ix.1982, B. Hanich & T. F. Houston, WAMA; 1♀, 64 km NE Esperance, 18.x.1982, S. Barker, SAMA; 1♂, Bullfinch, 2.x.1983, B. Jones, MPWA; 1♀, 35 km W Salmon Gums, 8.x.1983, G. Browning & G. Mutze, SAMA; 3♂♂, 1♀, Southern Cross, 8.x.1983, R. P. McMillan, WAMA; 6♂♂, 9♀, Esperance to Norseman Hwy, 35 km W T.O. to Peake Charles, 9.x.1983, G. Browning & G. Mutze, SAMA; 2♀, 35 km E Merredin, 24.x.1983, G. Browning, SAMA; 1♂, 2♀, 50 km E Merredin, 24.x.1983, SAMA; 1♂, Ueberin Rock, 16.ix.1984, R. P. McMillan, WAMA; 1♂, 136 km NE Payne's Find, 30.ix.1984, M. Powell, MPWA; 1♂, 3 km W Dowerin, 22.x.1984, R. P. McMillan, WAMA; 1♂, Eneabba, 4.x.1985, R. P. McMillan, WAMA; 1♂, N Tarin Rock reserve, 15/16.x.1985, T. F. Houston, WAMA; 1♂, 75 km E Hyden, 24/27.x.1985, T. F. Houston, WAMA; 6♂♂, W of Coorow, 2.x.1986, A. G. Wells, WAMA; 1♂, 16 km NE Merredin, 9.x.1986, R. P. McMillan, WAMA; 2♂♂, Eneabba, x.1986, R.

P. McMillan, WAMA; 1♂, Bindoo Hill reserve, 12.ix.1987, T. F. Houston, WAMA; 2♂♂, 1♀, 7 km SSW Jingemarra Station, 24/26.viii.1988, R. P. McMillan & T. F. Houston, WAMA; 1♀, Shark Bay, 29.viii.1988, A. Hay, MHSA; 1♂, 110 km N Carnarvon, 18.ix.1989, S. Barker, SAMA; 2♂♂, 1♀, Pindar paddock, Talling Station, Pindar, 21.ix.1989, S. Barker, SAMA; 7♂♂, same data as holotype, SAMA; 1♂, 1♀, 3 km N Talling Station, Pindar, 22.ix.1989, S. Barker, SAMA; 2♂♂, 6 km N Talling Station, Pindar, 22.ix.1989, S. Barker, SAMA; 5♂♂, 19 km N Talling Station, Pindar, 22.ix.1989, S. Barker, SAMA; 1♂, gravel bay, Bonnie Rock, 20.ix.1990, S. Barker, SAMA; 2♂♂, Merredin, 21.x.1991, T. M. S. Hanlon, MHSA; 8♂♂, Ghooli, 21.x.1991, T. M. S. Hanlon, MHSA; 2♂♂, 3 km S Yellodine, 21.x.1991, T. M. S. Hanlon, MHSA; 5♂♂, N7T, 32 km E Southern Cross, 21.x.1991, T. M. S. Hanlon, MHSA; 1♂, Queen Victoria Springs, 21/22.xi.1992, D. Knowles, MHSA; 2♂♂, 1♀, Northam, SAMA; 2♂♂, Ankertell, H. W. Brown, SAMA.

Colour

Head dark blue with purple reflections. Antennae bronze. Pronotum dark blue with purple reflections. Scutellum purple. Elytra with yellow background colour and dark blue elytral markings, coalesced forming four yellow spots on each elytron, basal more or less rounded, pre-medial elongate, post-medial rounded, pre-apical elongate, basal and pre-medial coalesced in about half specimens examined forming an elongate mark, post-medial and pre-apical coalesced in only one specimen examined, yellow margin from base to near apex. Ventral surface bronze with coppery-purple reflections. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus present, muzzle short. Antennomeres 1-3 obconic, 4-11 toothed. Pronotum closely punctured, narrow basal fovea extending forwards to middle as glabrous line, basal notches represented by glabrous area on each side closer to margin than middle; apical margin projecting medially, basal margin almost straight; laterally angled inwards from base for short distance then angled outwards and rounded to widest part post-medially, rounded and narrowed to apex. Scutellum scutiform, punctured, flat. Elytra punctate-striate, intervals convex, wrinkled and punctured, more heavily laterally than medially; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially, narrowed to bispinose apex; marginal spine small and sharp, sutural spine minute, margin indented and rounded between spines, apices hardly diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere hairy, hairs medium length, flattened and feathery. S₁: truncate in males, rounded in females.

Size

Males, $10.1 \pm 0.15 \times 3.2 \pm 0.05$ mm (110). Females, $10.7 \pm 0.24 \times 3.4 \pm 0.08$ mm (56).

Aedeagus (Fig. 1U)

Parameres angled outwards from basal piece, rounded at apex. Penis sharp, sides obtusely angled away. Apophysis of basal piece medium width, apex rounded. Proctiger faintly bilobed, lobes rounded (Fig. 1U).

Female terminalia (Fig. 1U2)

Proctiger faintly bilobed, lobes faintly rounded.

Remarks

C. azurea can be distinguished from all other members of the *C. parallela* species group except *C. octopunctata* by the dark blue colour of the elytra. *C. octopunctata* has round yellow elytral markings whereas they are elongate in *C. azurea*. In *C. azurea* the aedeagus is short and broad and in *C. octopunctata* it is elongate (Figs 1P, 1U). The proctigers in both sexes of *C. octopunctata* have pointed lobes whereas in both sexes of *C. azurea* the proctiger lobes are small and rounded (Figs 1P1, 1P2, 1U1, 1U2). There appears to be a cline in size within *C. azurea*. Specimens from north of Carnarvon and from the NE wheatbelt areas of WA are larger than those from further east and south. A minority of specimens has the first two yellow marks on the elytra fused to form an elongate basal mark.

Etymology

The species name is derived from *F. azur*, blue.

Castiarina charientessa sp. nov.
(FIGS 1T, 1T1, 1T2, 3K)

Holotype: ♂, 10 km S Dongara, WA, 4.ix.1995, S. Barker, SAMA I 21 307.

Allotype: ♀, 20 km S Lancelin, WA, 4.x.1990, S. Barker, SAMA I 21 308.

Paratypes: WA: 2♂♂, Cervantes, 23.ix.1977, M. Powell, MPWA; 2♂♂, 6♀♀, 45 km N Eneabba, 20.ix.1980, S. Barker & D. J. Williams, SAMA; 2♀♀, 200 m N Ledge Pt T.O., Lancelin Rd, 8.x.1980, S. Barker, SAMA; 1♂, 2♀♀, McDermid Rock, 11.ii.1981, G. J. Keighery, WAMA; 2♂♂, 1♀, Green Head, 27.viii.1981, R. P. McMillan, WAMA; 1♂, 1♀, 2 km N Badgingarra, M. Powell, 15.ix.1984, MPWA; 1♂, Greenough, 26/29.viii.1989, R. P. McMillan, SAMA; 2♂♂, same data as holotype SAMA; 1♂, 10 km S Dongara, 4.ix.1995, S. Barker, SAMA.

Colour

Head coppery. Antennae bronze. Pronotum coppery. Scutellum bronze with blue-green reflections. Elytra yellow with coppery markings coalesced forming a yellow margin two interstices wide; a yellow vitta on each side from base to pre-apical area. Ventral surface coppery. Legs: femora and tibiae coppery; tarsomeres bronze. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus present, muzzle short. Antennomeres 1-3 obconic, 4-II toothed. Pronotum closely punctured, small basal fovea extending anteriorly to middle as glabrous line; apical margin projecting medially, basal margin almost straight; laterally parallel-sided at base, angled outwards, rounded to widest at middle, rounded and narrowed to apex. Scutellum scutiform, glabrous, flat. Elytra punctate-striate, intervals convex, wrinkled and punctured more heavily laterally than medially; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to bispinose apex; both spines minute, margin rounded and indented between spines, apices diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere dense, flat, feathery hairs. S_7 : males truncate; females rounded.

Size

Males $12.9 \pm 0.24 \times 4.3 \pm 0.08$ mm (12). Females, $13.5 \pm 0.17 \times 4.3 \pm 0.13$ mm (14).

Aedeagus (Fig. 1T1)

Parameres angled outwards from basal piece, rounded apically. Penis sharp, sides acutely angled away. Apophysis of basal piece medium width, rounded apically. Proctiger bilobed, lobes near mid-line, blunt, apical edge straight, rounded laterally (Fig. 1T1).

Female terminalia (Fig. 1T2)

Proctiger as in male, lobes more pronounced.

Remarks

This species can be distinguished from any others in the group by the elytral markings. It is the only species occurring in WA which has all of the yellow elytral spots fused to form an elongate yellow vitta on each elytron. Some specimens have darker red markings on the elytra than others and these tend to fade to dark brown in old specimens. Six specimens of the type series have a long, separate pre-apical yellow mark. All specimens except those collected at McDermid Rocks were taken on the flowers of *Chamaelaucium* sp.

Etymology

The specific name is derived from Gk *charientos*, beautiful.

Castiarina ferruginea sp. nov.
(FIGS 1Q, 1Q1, 1Q2, 3H)

Holotype: ♂, Wialki, WA, 18.ix.1957, S. Barker, SAMA I 21 309.

Allotype: ♀, same data as holotype, SAMA I 21 310.

Paratypes: WA: 2♂♂, Wialki, ix.1959, F. H. Uther Baker, WAMA; 1♂, 88 km NE Wubin, 17.ix.1970, S. Barker, SAMA; 1♂, Walyahmoning Rock (30° 38' S 118° 45' E), 9.x.1972, A. Baynes & R. Humphries, WAMA; 3♂♂, 2♀♀, Muckinbudin, 10.x.1979, R. P. McMillan, WAMA; 2♀♀, 8 km E Woolgangie, 22.x.1980, S. Barker & P. G. Kempster, SAMA; 2♂♂, Southern Cross, x.1981, R. P. McMillan, WAMA; 1♀, Johnson Lake, 8.xi.1981, D. Knowles, MPWA; 3♂♂, 1♀, Southern Cross, 8.x.1983, R. P. McMillan, WAMA; 2♂♂, Eneabba, 15.x.1985, R. P. McMillan, WAMA; 1♂, 1♀, Dedari, 20.x.1986, M. Powell, MPWA; 1♂, 30 km E Lake King, 18.xi.1988, M. Powell, MPWA; 2♂♂, 2♀♀, N7T Transmitter, 32 km E Southern Cross, 21.x.1991, T. M. S. Hanlon, MHSA; 2♂♂, 4♀♀, Dedari, 21.x.1991, T. M. S. Hanlon, MHSA; 1♀, Karlgarin, Bessy Tolland, WAMA.

Colour

Head dark coppery with blue-green reflections. Antennae bronze. Pronotum dark coppery with blue-green reflections. Scutellum dark purple. Elytra yellow with dark maroon markings coalesced forming a narrow yellow margin from base to pre-apical area, one interstice wide from base, two interstices wide at humeral callus, two wide pre-medially continuously two wide from post-medially: row of four yellow spots on each side, basal round the remaining three elongate. Ventral surface coppery. Legs: femora and tibiae dark copper, tarsi bronze. Hairs silver.

Shape and sculpture

Head punctured, median sulcus present, muzzle short. Antennomeres 1-3 obconic, 4-11 toothed. Pronotum closely punctured, small basal fovea extending anteriorly to middle as glabrous line; apical margin projecting medially, basal margin almost straight, laterally parallel-sided at base, angled outwards then rounded to widest medially, rounded and narrowed to apex. Scutellum scutiform, elongate, glabrous, excavate. Elytra punctate-striate, intervals convex, punctured and wrinkled, more so laterally than medially; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to unispinose apex; blunt marginal spine, margin indented and straight to suture, apices hardly diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere with dense, flattened, feathery hair. S_7 : males, truncate; females rounded.

Size

Males, $12.3 \pm 0.2 \times 4.0 \pm 0.07$ mm (21). Females, $13.2 \pm 0.22 \times 4.3 \pm 0.09$ mm (15).

Aedeagus (Fig. 1Q)

Parameres angled outwards from basal piece, pre-medially rounded then shallowly concave, rounded apically. Penis sharp, sides obtusely angled away. Hypophysis of basal piece broad, rounded apically. Proctiger bilobed, bluntly pointed near mid-line, laterally straight (Fig. 1Q1).

Female terminalia (Fig. 1Q2)

Proctiger bilobed, strongly pointed near mid-line, laterally straight.

Remarks

The range of this species overlaps with that of *C. ustulata* sp. nov. which is approximately the same colour but smaller. They can be distinguished on the basis of the yellow elytral markings: in *C. ferruginea* there are four yellow spots on each elytron and in *C. ustulata* three, as the first two are fused forming an elongate basal spot and the last two are separate. *C. ferruginea* has a single, large marginal spine at the apex of the elytra and *C. ustulata* has two small spines. The aedeagi are different (Figs 1Q, 1V); both male and female proctigers in both species are strongly lobed, those of males are quite similar in size and shape but proctigers of female *C. ferruginea* are more pointed than in *C. ustulata* which have black pigment spots at the tip of each lobe; these spots are absent in the other species (Figs 1Q2, 1V2).

Etymology

The specific name is derived from *L. ferrugineus*, rust-coloured.

Castiarina ustulata sp. nov.
(FIGS 1V, 1V1, 1V2, 3F)

Holotype: ♂, 8 km E Woolgangie, WA, 22.x.1980, S. Barker & P. G. Kempster, SAMA I 21 311.

Allotype: ♀, same data as holotype, SAMA I 21 312.

Paratypes: WA: 1♂, Dumbleyung, 5.x.1963, H. Udell, WAMA; 1♂, 1♀, same data as holotype, SAMA; 3♀♀, Wialki, 21.ix.1970, S. Barker, SAMA; 2♂♂, 9 km SW Walyahmoning Rock, 9.x.1972, A. Baynes & R. Humphries, WAMA; 1♂, 18.9 km WSW Coolgardie, 18.ix.1976, R. J. Chinnock, SAMA; 1♀, Dedari, 8.x.1978, T. M. S. Hanlon, WAMA; 1♂, Muckinbudin, 10.x.1979, R. P. McMillan, WAMA;

1 ♀, Southern Cross, x.1981, R. P. McMillan, WAMA; 1 ♂, Bullfinch, 2.x.1983, B. Jones, MPWA; 1 ♂, Southern Cross, 8.x.1983, R. P. McMillan, WAMA; 1 ♀, 28 km NE Peak Charles, 9.x.1983, G. Browning & G. Mutze, SAMA; 1 ♂, 1 ♀, 45 km SW McDermid Rock, 24.x.1985, T. F. Houston & R. W. Thorp, WAMA; 2 ♀ ♀, Dedari, 20.x.1986, M. Powell, MPWA; 1 ♂, Bindoo Hill Nature Reserve, 27 km W Mullewa, 12.ix.1987, T. F. Houston, WAMA; 4 ♂ ♂, 2 ♀ ♀, N7T Transmitter, 37 km E Yellowline, 21.x.1991, T. M. S. Hanlon, MHSA; 2 ♂, 4 ♀ ♀, Dedari 22.x.1991, T. M. S. Hanlon, MHSA; 3 ♂ ♂, 1 ♀, Karlgarin, Bessy Tolland, WAMA.

Colour

Head coppery. Antennae bronze. Pronotum coppery. Scutellum blue. Elytra yellow with brown markings with coppery reflections coalesced and forming a yellow margin from base to pre-apical area, one interval thick medially, two intervals thick elsewhere; three medial yellow marks on each side with an elongate basal mark formed from the fusion of the basal and pre-medial marks, round post-medial mark and elongate pre-apical mark. Ventral surface either all coppery or with coppery sternum and coppery-brown abdomen with blue reflections. Legs: femora coppery; tibiae and tarsi bronze. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus present, muzzle short. Antennomeres 1-3 obconic, 4-II toothed. Pronotum closely punctured, small basal fovea extending anteriorly to middle as impressed line; apical margin projecting medially, basal margin almost straight; laterally parallel-sided at base, rounded to widest pre-medially, rounded and narrowed to apex. Scutellum scutiform, glabrous, excavate. Elytra punctate-striate, intervals convex, punctured and wrinkled, more so laterally than medially; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to bispinose apex; sharp marginal spine, minute sutural spine, margin rounded and indented between spines, apices hardly diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere dense flattened, feathery hairs. S₇: males truncate; females rounded.

Size

Males, 12.1 ± 0.15 x 3.9 ± 0.05 mm (20). Females, 12.7 ± 0.19 x 4.0 ± 0.07 mm (18).

Aedeagus (Fig. 1V)

Parameres parallel-sided from basal piece, angled outwards pre-medially, rounded apically. Penis sharp, sides acutely angled away. Hypophysis of basal piece

medium width, apically rounded. Proctiger bilobed, lobes near mid-line, blunt, apical edge straight, laterally rounded (Fig. 1VI).

Female terminalia (Fig. 1V2)

Proctiger bilobed, lobes near mid-line, blunt, each with a dark pigment spot at tip, apical edge straight, laterally rounded, hairless.

Remarks

See remarks under *C. ferruginea*. Elytral markings are the same in this species as in *C. antarctica* sp. nov. but they have non-overlapping ranges. The aedeagus in *C. antarctica* is shorter and broader than that in *C. ustulata* (Figs. 1O, 1V). The proctigers of both sexes in *C. ustulata* are bilobed with more highly developed lobes than those in *C. antarctica* (Figs 1O1, 1O2, 1V1, 1V2).

Etymology

The specific name is derived from *L. ustulatus*, scorched.

Castiarina phaeopus sp. nov. (FIGS 1W, 1W1, 1W2, 3E)

Holotype: ♂, 3 km E Gosnells, WA, 4.xi.1956, S. Barker, SAMA 1 21 313.

Allotype: ♀, Red Hill, WA, 2.ix.1949, R. P. McMillan, SAMA 1 21 314.

Paratypes: WA: 3 ♂ ♂, 1 ♀, no data, SAMA; 2 ♂ ♂, Swan R., Lea, SAMA; 1 ♀, Bunbury, W. M. Mack, i.1898, SAMA; 2 ♀ ♀, Perth, xi.1906, SAMA; 2 ♂ ♂, 1 ♀, Perth, x.1913, SAMA; 4 ♂ ♂, Perth, xi.1920, J. W. Mellor, SAMA; 1 ♂, 1 ♀, same data as allotype, SAMA; 1 ♂, Mimmegarra, Dandaragan, 30.x.1955, S. Barker, SAMA; 2 ♂ ♂, 2 km E Gosnells, 4.xi.1956, S. Barker, SAMA; 15 ♂ ♂, same data as holotype, SAMA; 2 ♂ ♂, summit Mt Cooke, 10.xi.1956, S. Barker, SAMA; 1 ♂, 1 ♀, 70 km SE Perth on Albany Hwy, 10.xi.1956, S. Barker, SAMA; 1 ♂, foothills Kelmescott, 21.x.1958, J. Baldwin, SAMA; 3 ♂ ♂, 2 ♀ ♀, Wilga, 26.x.1972, K. & E. Carnaby, SAMA; 2 ♂ ♂, Lesmurdie, 28.ix.1955, J. A. Watson, SAMA; 1 ♀, Julimar Forest, 24.x.1971, F. H. Uther Baker, SAMA; 6 ♂ ♂, 3 ♀ ♀, Cataby Bk, 18.x.1983, G. Browning & G. Mutze, SAMA; 1 ♂, Gosnells, 7.x.1980, S. Barker, SAMA; 1 ♂, Mundaring Weir, 30.ix.1980, T. M. S. Hanlon, MHSA; 1 ♀, Mt Dale, 29.ix.1980, T. M. S. Hanlon, MHSA.

Colour

Head brown with coppery reflections. Antennae bronze. Pronotum brown with coppery reflections.

Scutellum coppery with blue reflections. Elytra yellow with the following markings: narrow blue basal margin, other markings blue with coppery reflections coalesced leaving a yellow margin from base to apex from one to two intervals wide and two yellow marks in the middle of each elytron in the form of an elongate basal vitta formed by the fusion of the first three spots and an elongate pre-apical mark. Ventral surface coppery. Legs: femora coppery; tibiae and tarsi bronze. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus present, muzzle short. Antennomeres 1-3 obconic, 4-II toothed. Pronotum closely punctured basal fovea extending forwards to middle as impressed line; apical margin projecting medially, basal margin almost straight; laterally parallel-sided at base, angled outwards, rounded medially at widest part, rounded and narrowed to apex. Scutellum scutiform, glabrous, flat. Elytra punctate-striate, intervals convex, punctured and wrinkled laterally, punctured and smooth medially; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially, narrowed to bispinose apex; very small sharp spines, margin rounded and indented between spines, apices hardly diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere dense flattened, feathery hairs. S_7 : males truncate; females rounded.

Size

Males, $11.1 \pm 0.11 \times 3.7 \pm 0.05$ mm (51), Females, $11.5 \pm 0.35 \times 3.8 \pm 0.12$ mm (12).

Aedeagus (Fig. 1W)

Parameres angled outwards from basal piece, apically rounded. Penis sharp, sides acutely angled away. Hypophysis of basal piece medium width, apically rounded. Proctiger with small medial notch in apical edge, laterally rounded (Fig. 1W).

Female terminalia (Fig. 1W2)

Proctiger bilobed, apical edge straight, laterally rounded.

Remarks

C. phaeopus sp. nov. can be distinguished from all others in this complex by being the only species which has the first three elytral yellow spots fused to form an elongate basal mark with the fourth an elongate pre-apical yellow mark.

Etymology

The specific name is derived from Gk *phaios*, brown.

Castiarina antarctica sp. nov. (FIGS 10, 1 O1, 1 O2, 3D)

Holotype: ♂, 64 km NE Esperance, WA, 18.x.1982, S. Barker, P. G. Kempster & H. Vanderwoude, SAMA I 21 315.

Allotype: ♀, same data as holotype, SAMA I 21 316.

Paratypes: WA: 1 ♂, Mt Ragged, 24.x.1980, S. Barker & P. G. Kempster, SAMA; 1 ♂, 13 km N Israelite Bay, 24.x.1980, S. Barker & P. G. Kempster, SAMA. 1 ♂, 2 ♀ ♀, 24 km N Israelite Bay, 24.x.1980, S. Barker & P. G. Kempster, SAMA; 1 ♂, same data as holotype, SAMA; 5 ♂ ♂, 7 km N Dempster Rd Scadden Rd crossing, Esperance district, 18.x.1982, S. Barker, P. G. Kempster & H. Vanderwoude, SAMA; 2 ♂ ♂, 2 ♀ ♀, Parmangoes Rd 2 km NE Clyde Hill T.O., Esperance district, S. Barker, P. G. Kempster & H. Vanderwoude, SAMA; 1 ♀, Israelite Bay, 21.x.1982, S. Barker, P. G. Kempster & H. Vanderwoude, SAMA; 2 ♂ ♂, 1 ♀, 17 km NW Israelite Bay, 21.x.1982, S. Barker, P. G. Kempster & H. Vanderwoude, SAMA.

Colour

Head coppery. Antennae bronze. Pronotum dark bronze medially, with coppery reflections laterally. Scutellum coppery-purple. Elytra yellow with the following dark brown markings with coppery reflections coalesced leaving yellow margin, two intervals wide at apex and at humeral callus, one interval wide medially; a row of yellow spots medially on each elytron, basal and pre-medial coalesced forming an elongate mark, post-medial more or less round, apical smaller and elongate. Ventral surface coppery. Legs: femora dull purple with coppery reflections; tibiae and tarsi bronze. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus narrow, muzzle short. Antennomeres 1-3 obconic, 4-II toothed. Pronotum closely punctured, small basal fovea extending forward to middle as glabrous line; apical margin projecting medially, basal margin almost straight; laterally parallel-sided at base, rounded to widest pre-medially, narrowed to apex. Scutellum scutiform, flat, glabrous. Elytra punctate-striate, intervals convex, punctured and wrinkled laterally and apically, smooth medially; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to bispinose apex; very small marginal spine, minute medial spine, margin rounded and indented between spines, apices divergent. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere densely hairy, hairs flat and feathery. S_7 : males truncate; females rounded.

Size

Males, $12.0 \pm 0.19 \times 3.9 \pm 0.06$ mm (14). Females, $12.0 \pm 0.22 \times 4.0 \pm 0.09$ mm (7).

Aedeagus (Fig. 10)

Parameres angled outwards from basal piece, rounded pre-medially, parallel-sided post-medially, rounded at apex. Penis sharp, sides acutely angled away. Hypophysis of basal piece medium width, apically rounded. Proctiger bilobed, lobes bluntly pointed near mid-line, laterally straight (Fig. 1 O1).

Female terminalia (Fig. 1 O2)

Proctiger bilobed, lobes blunt near mid-line, laterally straight.

Remarks

The remarks made under those for *C. ustulata* sp. nov. apply equally to this species as these are the only two species in this complex which have this elytral pattern. They can be easily distinguished by differences in aedeagi (Figs 10, 14) and in male and female proctigers (Figs 1 O1, 1 O2, 1 V1, 1 V2). Also they are allopatric.

Etymology

The name is derived from Gk *antarktikos*, southern.

Castiarina nonyma sp. nov.
(FIGS 1X, 1 XI, 1 X2, 3A)

Holotype: ♂, Summit Mt Cooke, WA, 10.xi.1956, S. Barker, SAMA 1 21 317.

Allotype: ♀, Julimar Forest, WA, 24.x.1971, F. H. Uther Baker, SAMA 1 21 318.

Paratypes: WA: 2♂♂, 2♀♀, Beverley, E. F. du Boulay, SAMA; 2♂♂, Perth, SAMA; 1♂, Swan R., SAMA; 1♀, xii.1913, SAMA; 2♂♂, same data as holotype, SAMA; 1♂, Mt Walker (32°05' S 118°45' E) 16.x.1979, R. P. McMillan, WAMA; 1♂, Gosnells, 7.x.1980, S. Barker, SAMA; 1♀, Forrestfield, 27.viii.1978, T. M. S. Hanlon, WAMA; 1♀, Eneabba, 17.x.1985, R. P. McMillan, WAMA.

Colour

Head and antennae dark maroon, Pronotum dark maroon with blue reflections medially, Scutellum dark maroon. Elytra yellow with maroon markings coalesced to form yellow margins, two intervals wide at humeral callus and apically, one interval wide medially; a medial row of four yellow spots on each elytron, basal and post-medial more or less round, pre-medial and pre-apical elongate, in about a quarter of the

specimens examined the first two coalesced forming an elongate basal yellow mark. Ventral surface maroon. Legs: femora maroon; tibiae maroon proximally, bronze medially; tarsi bronze. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus shallow, muzzle short. Antennomeres 1-3 obconic, 4-11 toothed. Pronotum closely punctured, small basal fovea extending forwards to middle as impressed line; apical margin projecting medially, basal margin almost straight; laterally parallel-sided at base, rounded to widest medially, rounded and narrowed to apex. Scutellum scutiform, glabrous, excavate. Elytra punctate-striate, intervals convex punctured and wrinkled laterally and apically, smooth medially; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to unispinose apex; small, blunt marginal spine, margin straight and indented to suture, apices diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere with dense flat, feathery hair. S_7 : males truncate; females rounded.

Size

Males, $11.0 \pm 0.28 \times 3.5 \pm 0.09$ mm (10). Females, $11.1 \pm 0.24 \times 3.7 \pm 0.07$ mm (6).

Aedeagus (Fig. 1X)

Parameres angled outwards from basal piece, slightly rounded post-medially then angled outwards, apically rounded. Penis sharp, sides acutely angled away. Hypophysis of basal piece medium width, apically rounded. Proctiger with medial apical edge straight, then angled forming two small broadly pointed lobes, laterally rounded (Fig. 1 XI).

Female terminalia (Fig. 1 X2)

Proctiger bilobed, medial apical margin faintly concave, lobes small and broadly pointed, laterally rounded.

Remarks

No female specimens associated with males at the same collection locality were available. This and the following species *C. enigma* sp. nov. have elytra predominantly eight spotted, although a small number of each has the first two spots coalesced. The two species can be distinguished by differences in aedeagi which are short and broad in *C. enigma* and elongate in *C. nonyma* (Figs 1X, 1Y) and in male and female proctigers which are virtually unsculptured in *C. enigma* and bilobed with pointed lobes in *C. nonyma* (Figs 1 XI, 1 X2, 1 Y1, 1 Y2). The distribution of *C. nonyma* appears to be mainly to the east of the Darling Scarp fault line, while that of *C. enigma* is to the west of the Darling Scarp on the coastal Plain.

Etymology

The name is derived from Gk *anonymos*, unknown.

Castiarina enigma sp. nov.
(FIGS 1Y, 1 Y1, 1 Y2, 3C)

Holotype: ♂, Regans Ford, WA, 9.x.1970, K. & E. Carnaby, SAMA 1 21 319.

Allotype: ♀, 6 km S Gin Gin, WA, 30.ix.1956, S. Barker, SAMA 1 21 320.

Paratypes: WA: 1♂, 1♀, no data, SAMA; 1♂, E. Ashby, SAMA; 1♀, Perth, SAMA; 1♀, Perth xi.1905, SAMA; 2♂♂, Perth, x.1913, SAMA; 2♂♂, 1♀, same data as allotype, SAMA; 8♂♂, 1♀, same data as holotype, SAMA.

Colour

Head and antennae dark maroon with blue reflections. Pronotum dark maroon, with blue reflections medially. Scutellum dark maroon with blue reflections. Elytra yellow with brown markings with coppery reflections coalesced leaving a yellow margin two intervals wide at humeral callus and apically, one interval wide medially; row of four medial yellow spots on each elytron, basal and post-medial more or less round, pre-medial and pre-apical elongate. Ventral surface and legs coppery. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus shallow, muzzle short. Antennomeres 1-3 obconic, 4-II toothed. Pronotum closely punctured, narrow basal fovea extending forwards to middle as glabrous line; apical margin projecting medially, basal margin rounded from base to widest medially, rounded and narrowed to apex. Scutellum scutiform, glabrous, flat, Elytra punctate-striate, intervals convex, punctured and wrinkled laterally smooth medially; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to bispinose apex; small, blunt marginal spine, minute sutural spine, margin rounded and indented between spines, apices diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere densely hairy, hairs flat and feathery. S₇: males truncate; females rounded.

Size

Males, 10.7 ± 0.17 x 3.4 ± 0.06 mm (15). Females, 11.8 ± 0.37 x 4.0 ± 0.13 mm (6).

Aedeagus (Fig. 1Y)

Broad. Parameres angled outwards from basal piece, rounded apically. Penis sharp, sides obtusely angled

away. Apophysis of basal piece medium width, apically rounded. Proctiger broadly rounded at apex, sides rounded (Fig. 1 Y1).

Female terminalia (Fig. 1 Y2)

Proctiger rounded.

Remarks

The remarks under *C. nonyma* apply equally to this species.

Etymology

The name is derived from L. *aenigma*, mystery.

Castiarina aura sp. nov.
(FIGS 1S, 1 S1, 1 S2, 3I)

Holotype: ♂, 131 km S Exmouth, WA, 12.ix.1984, M. Powell, WAMA.

Allotype: ♀, same data as holotype, WAMA.

Paratypes: WA: 1♀, 50 km N Kalbarri T.O., 20.viii.1978, T. M. S. Hanlon, WAMA; 1♂, Yardie Ck, 18.viii.1983, M. Powell, MPWA; 1♂, Coral Bay, 10.ix.1984, M. Powell, MPWA; 1♂, 1♀, Carnarvon, 28.viii.1987, A. Hay, SAMA; 1♀, 94 km S Learmonth, 2.ix.1995, Powell & Kershaw, MPWA; 1♀, 62 km S Learmonth, 4.ix.1995, MPWA; 1♂, 1♀, 26 km S Learmonth, 3.ix.1995, Powell & Kershaw, MPWA.

Colour

Head coppery. Antennae bronze with coppery reflections. Pronotum coppery, with medial blue-green reflections. Scutellum blue-green. Elytra yellow with the following elytral markings: markings coalesced, coppery apically, with blue-green reflections along the suture and over the humeral callus forming a yellow margin two intervals wide, medial row of four yellow spots on each elytron, basal and post-medial more or less round, pre-medial and pre-apical elongate. Ventral surface and legs coppery. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus shallow, muzzle short. Antennomeres 1-3 obconic, 4-II toothed. Pronotum closely punctured, basal fovea extending forwards to middle as glabrous line; apical margin projecting medially, basal margin almost straight; laterally parallel-sided at base, rounded to widest before middle, rounded and narrowed to apex. Scutellum scutiform, wrinkled, excavate. Elytra punctate-striate, intervals convex, punctured and wrinkled laterally, smooth medially; laterally angled outwards from base

rounded at humeral callus, concave, rounded after middle, tapered to unispinose apex; marginal spine rounded, margin rounded and indented to suture, apices diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere dense, flat, feathery hairs. S_7 males truncate; females rounded.

Size

Male, $11.9 \pm 0.42 \times 4.0 \pm 0.15$ mm (5). Females, $12.9 \pm 0.44 \times 4.3 \pm 0.18$ mm (6).

Aedeagus (Fig. 1S)

Parameres angled outwards from basal piece, rounded post-medially, parallel-sided, rounded at apices. Penis sharp, sides acutely angled away. Apophysis of basal piece wide, apically rounded. Proctiger bilobed, lobes blunt (Fig. 1 S1).

Female terminalia (Fig. 1 S2)

Proctiger bilobed, lobes strongly pointed near mid-line.

Remarks

C. aura sp. nov. and *C. ferruginea* sp. nov. are similar in that both have four separate yellow spots on each elytron and a large single marginal spine on the apices of the elytra although the elytral colour is different. *C. aura* being red with green reflections while *C. ferruginea* is brownish. Aedeagi differ as they are shorter and narrower in *C. aura* than they are in *C. ferruginea* (Figs 1Q, 1S). The proctigers of *C. ferruginea* males are strongly bilobed while those of *C. aura* are faintly bilobed (Figs 1 Q1, 1 S1). The proctigers of females of both species are bilobed and pointed but the lobes are further apart in *C. aura* than they are in *C. ferruginea* (Figs 1 Q2, 1 S2).

Etymology

The name is derived from *L. aura*, glow.

Key to WA species of *C. parallela* complex

- | | |
|---|-------------------------------|
| 1. Elytra background colour dark blue | 2 |
| Elytra background colour brown, red or green | 3 |
| 2. Elytra with 8 round, yellow marks | <i>octopunctata</i>
Barker |
| Elytra with 2 round, 6 elongate yellow marks | <i>azurea</i> sp. nov. |
| 3. Elytra bright red or partially or wholly brassy green | 4 |
| Elytra brown or red-brown | 6 |
| 4. Elytra bright red, elytral apices with two small spines, elytral spots coalesced into single elongate yellow mark on each side | <i>charientessa</i> sp. nov. |
| Elytra bright red or partially or wholly brassy green, elytra with 8 yellow spots | 5 |

- | | |
|--|----------------------------|
| 5. Elytral apices with 1 large spine | <i>aura</i> sp. nov. |
| Elytral apices with 2 small, blunt spines | <i>croccicolor</i> (L & G) |
| 6. Some elytral marks coalesced forming 6 or fewer yellow marks | 7 |
| Elytra with 8 yellow marks | 10 |
| 7. First 3 yellow marks on each elytron coalesced, forming 1 elongate anterior mark and 1 small elongate mark posteriorly on each side | <i>phacopus</i> sp. nov. |
| First 2 yellow marks on each elytron coalesced, forming 1 elongate anterior mark and 2 small elongate marks posteriorly on each side | 8 |
| 8. Pronotum bronze, elytra dull brown, male proctiger slightly sculptured, female proctiger unsculptured. Largest member of group. | <i>adusta</i> sp. nov. |
| Pronotum, elytra with coppery reflections | 9 |
| 9. Proctiger bilobed, lobes pointed, in females with pigment spot at tip | <i>ustulata</i> sp. nov. |
| Proctiger medially notched, lobes blunt without pigment in females | <i>antarctica</i> sp. nov. |
| 10. Elytral apices with single large spine | <i>ferruginea</i> sp. nov. |
| Elytral apices bispinose | 11 |
| 11. Aedeagus broad, proctiger unsculptured in both sexes | <i>enigma</i> sp. nov. |
| Aedeagus narrow, proctiger sculptured in both sexes | <i>nonyma</i> sp. nov. |

Castiarina nullarborica sp. nov. (FIGS 1J, 4D)

Holotype: ♂, 5 km E Eucla, WA, 28.x.1989, K. L. Walker, NMVA.

Allotype: ♀, Nullarbor Plain, SA. SAMA I 21 321.

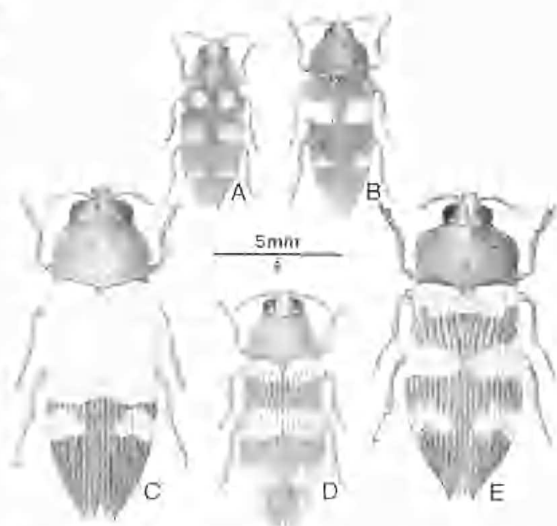


Fig. 4. Habitus illustrations of the following *Castiarina* species. A. *Castiarina jackhasenpuschi* sp. nov. holotype. B. *C. hemizostera* sp. nov. holotype. C. *C. paulhasenpuschi* sp. nov. holotype. D. *C. nullarborica* sp. nov. holotype. E. *C. demarzi* sp. nov. allotype.

Paratypes: SA: 1♂, 32 km E Eucla, 11.xii.1984, M. Powell, MPWA. WA: 1♂, same data as holotype, SAMA.

Colour

Head dark blue. Antennae blue-green. Pronotum bronze medially, dark blue laterally. Scutellum dark blue. Elytra yellow with red margin and the following black markings with blue reflections: narrow basal margin; broad pre-medial fascia not reaching margin, distally angled anteriorly; broad post-medial fascia reaching margin; spade-shaped apical mark covering apex and spines, last two marks connected broadly along suture. Ventral surface bronze. Legs dark blue. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus broad, muzzle short. Antennomeres 1-4 obconic, 5-II toothed. Pronotum closely punctured, small basal fovea; apical margin straight, basal margin bisinuate; laterally parallel-sided at base, rounded to widest pre-medially, rounded and narrowed to apex. Scutellum scutiform, glabrous, flat. Elytra punctate-striate, intervals convex, punctured; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to bispinose apex; sharp marginal spine, small, sharp sutural spine, margin rounded and deeply indented between spines, apical margin subserrate. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere moderately hairy, hairs medium length. S_7 : truncate in both sexes. Male legs 2-3; pulvilli absent on tarsomeres 1-3 replaced with a small double, median spine.

Size

Males, 9.2 x 3.5 mm (3). Female, 10.6 x 4.5 mm (1).

Aedeagus (Fig. 1J)

Wedge-shaped.

Remarks

This species is closest to the morph of *C. placida* (Thomson) which has a red margin and occurs on the west coast of WA and on Rottnest Is., WA. *C. nullarborica* is a smaller species than *C. placida* and the male genitalia differ in size and shape (Figs 1I, 1J).

Etymology

The name is derived from Nullarbor Plain, the area where this species occurs.

Castiarina demarzi sp. nov.
(FIGS 1H, 4E)

Holotype: ♂, Eurardy HS (27°34'S, 114°40'E) WA, 19.viii.1980, C. A. Howard & T. F. Houston, WAMA.

Allotype: ♀, 36 km NE Tamala Station, Shark Bay, WA, 28.ix.1988, D. Knowles, WAMA.

Paratypes: WA: 1♀, same data as allotype, MPWA; 1♀, 26 km NE Tamala Station, 6.x.1988, D. Knowles, SAMA; 1♀, found in seed collection from NW coast, 29.viii.1986, H. Demarz, HDWA.

Colour

Head, antennae and pronotum bronze with or without coppery reflections. Scutellum blue or bronze. Elytra yellow with the following black markings with blue reflections: narrow basal margin; pre-medial fascia not reaching margin, distally angled anteriorly; post-medial fascia reaching margin, projecting anteriorly in middle of each elytron; mark covering whole apex, marks connected along suture in holotype but not allotype. Ventral surface and legs coppery. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus broad, muzzle very short. Antennomeres compressed, 1-3 obconic, 4-II toothed. Pronotum closely punctured, basal fovea extending anteriorly to middle as glabrous line, basal notches represented by glabrous area on each side closer to margin than middle; apical margin projecting medially, basal margin barely bisinuate; laterally angled outwards from base, rounded to widest after middle, rounded and narrowed to apex. Scutellum scutiform, glabrous, flat. Elytra punctate-striate, intervals convex, punctured; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to bispinose apex; sharp marginal spine, small, sharp sutural spine, apices diverging, apical margin subserrate. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere short sparse hair. S_7 : male truncate; females rounded.

Size

Male, 10.0 x 3.7 mm (1). Females, 11.7 ± 0.22 x 4.6 ± 0.11 mm (4).

Aedeagus (Fig. 1H)

Parameres parallel-sided from basal piece, rounded pre-medially then narrowed to apex. Penis blunt, sides acutely angled away. Hypophysis of basal piece medium width, apically rounded.

Remarks

The structure and elytral markings of this species resemble *C. bucolica* (Kerremans). However *C. bucolica* has head, pronotum and ventral surface green and there are size differences between aedeagi, that of *C. demarzi* being smaller than that of *C. bucolica* (Figs 1G, 1H).

Etymology

The name honours Mr Herbert Demarz, Guilderton, who has generously assisted my research by loaning specimens for many years.

Castiarina jackhasenpuschi sp. nov.
(FIGS 1L, 4A)

Holotype: ♂, Cardwell Ra., Qld, 22.xii.1995, J. Hasenpusch, SAMA I 21 322.

Allotype: ♀, Cardwell Ra., Qld, 22.xii.1995, P. Hasenpusch, SAMA I 21 323.

Colour

Head reddish-bronze, muzzle green-bronze. Antennae green. Pronotum reddish-bronze with a curved blue bar, concave inwards, on each side of the mid-line from base to apex. Scutellum green with yellow reflections. Elytra yellow with the following black markings: broad basal margin; broad pre-medial fascia with ends expanded anteriorly reaching basal margin and posteriorly reaching margin enclosing a yellow basal spot and a yellow spot on margin at humeral callus; broad post-medial fascia reaching margin and mark covering whole apex; yellow medial fascia not reaching margin; yellow post-medial fascia not reaching suture or margin; ventral surface green with yellow reflections, legs blue-green. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus present, muzzle short. Antennomeres 1-3 obconic, 4 half-toothed, 5-11 toothed. Pronotum closely punctured, small basal fovea; apical margin straight, basal margin bisinuate; laterally angled inwards from base, rounded, widest before middle, rounded and narrowed to apex. Scutellum scutiform, punctured, flat. Elytra punctate-striate, intervals convex, punctured; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially, narrowed to bispinose apex; large sharp marginal spine, minute sutural spine, margin indented and straight between spines, apices hardly diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere sparse very short hairs. S_7 : male rounded; female slightly rounded and turned under.

Size

Male, 6.4 x 2.5 mm (l). Female, 6.9 x 2.6 mm (l).

Aedeagus (Fig. 1L)

Narrow and elongate. Parameres angled inwards from basal piece, parallel-sided, rounded at apex. Penis sharp, sides acutely angled away. Apophysis of basal piece wide, apically rounded.

Remarks

This species superficially resembles *C. cydista* (Rainbow). It is however, smaller, the structure of the antennomeres differs as the 4th antennomere of *C. cydista* is fully toothed and male genitalia are dissimilar (Figs 1K, 1L).

Etymology

This species is named to honour Mr J. Hasenpusch, Innisfail, who has generously supported my research by loaning specimens and providing information.

Castiarina paulhasenpuschi sp. nov.
(FIGS 1F, 4C)

Holotype: ♂, Marsupial Ck near Croydon, Qld, 2.vi.1995, P. Hasenpusch, SAMA I 21 324.

Allotype: ♀, same data as holotype, SAMA I 21 325.

Paratypes: Qld: 1 ♀, same data as holotype JHQA; 2 ♂♂, Marsupial Ck, 1-15 iv.1995, P. Hasenpusch, JHQA; 1 ♂, 1 ♀, Marsupial Ck, 2.vi.1995, J. Hasenpusch, JHQA.

Colour

Head, bronze. Antennae bronze with green reflections. Pronotum bronze, laterally with green reflections. Scutellum green. Elytra yellow with the following black markings with blue reflections: narrow basal margin, in the holotype a mark covering most of apical half in form of a post-medial fascia connected to the apical mark leaving a pre-apical yellow spot on each margin; in one specimen the fascia is reduced to two small black spots on the margin. Ventral surface and legs green. Hairs silver.

Shape and sculpture

Head closely punctured, glabrous, median sulcus present, muzzle very short. Antennomeres compressed, 1-3 obconic, 4-11 toothed. Pronotum closely punctured, glabrous, basal fovea extending forwards but not reaching middle, basal notches on each side closer to margin than middle; apical margin projecting medially, basal margin bisinuate; laterally parallel-sided at base, rounded to widest at middle, rounded to apex. Scutellum scutiform, glabrous, excavate. Elytra punctate-striate, intervals convex, more so apically; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially, narrowed to bispinose apex; sharp marginal spine, small sharp sutural spine, margin indented and rounded between spines, apices diverging, apical margin strongly sub-serrate. Ventral surface with shallow punctures, edges of abdominal segments glabrous.

elsewhere moderately hairy, hairs medium length. S_7 : males truncate; females bilobed, each lobe with four claws.

Size

Males, $13.2 \pm 0.16 \times 4.5 \pm 0.07$ mm (4). Females, $13.5 \pm 0.45 \times 4.7 \pm 0.18$ mm (3).

Aedeagus (Fig. 1F)

Parameres parallel-sided from basal piece, rounded medially, parallel-sided, rounded to apex. Penis sharp, sides obtusely angled away. Apophysis of basal piece medium width, apically rounded.

Remarks

The distinct colour and pattern of this species distinguish it from all other species, as does the structure of the last visible abdominal segment in females, in which the claws are unique. The specimens examined were all caught by use of a colour lure in an area where no plants were flowering.

Etymology

The species name honours Master Paul Hasenpusch its discoverer.

Castiarina hemizostera sp. nov.

(FIGS 1N, 4B)

Holotype: ♂, Cardwell Ra., Qld, 22.xii.1995, J. Hasenpusch, SAMA I 21 326.

Allotype: ♀, Cardwell Ra., Qld, 24.xii.1993, J. Hasenpusch, SAMA I 21 327.

Paratypes: Qld: 1♂, Cardwell Ra., 19.xii.1995, J. Hasenpusch, JHQA; 2♂♂, same data as holotype; JHQA; 1♂, 1♀, 22.xii.1995, P. Hasenpusch, JHQA; 3♂♂, 30.xii.1995, J. Hasenpusch, JHQA.

Colour

Head black with blue-green reflections, muzzle blue. Antennae green. Pronotum with purple-green reflections medially, blue-green laterally. Scutellum green. Elytra yellow: with black markings with blue-green and/or purple reflections coalesced leaving the following yellow marks: pre-medial yellow fascia reaching margin but not suture, broad pre-apical yellow fascia reaching margin but not suture. Ventral surface black with bronze reflections. Legs blue. Hairs silver.

Shape and sculpture

Head closely punctured, median sulcus broad, muzzle short. Antennomeres 1-3 obconic, 4-11 toothed. Pronotum heavily punctured, basal fovea extending forwards to apical margin as impressed line; apical margin straight, basal margin bisinuate; laterally parallel-sided at base, rounded to widest pre-medially, rounded and narrowed to apex. Scutellum scutiform, punctured, flat. Elytra punctate-striate, intervals convex, heavily punctured; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to bispinose apex; sharp marginal spine, minute sutural spine, margin rounded and indented between spines, apices diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, elsewhere moderately hairy, hairs short. S_7 : males truncate; females rounded.

Size

Males, $7.0 \pm 0.2 \times 2.5 \pm 0.09$ mm (8). Females, 7.9×3.0 mm (2).

Aedeagus (Fig. 1N)

Parameres angled outwards from basal piece, rounded and widened post-medially, rounded at apex. Penis sharp, sides acutely angled away. Apophysis of basal piece wide, apically rounded.

Remarks

This species is allied to *C. bella* (Saunders) and is closest to *C. aglaia* (Barker). However, the post-medial fascia in *C. aglaia* is red and the male genitalia differ (Figs 1M, 1N).

Etymology

The name is derived from Gk *hemisys*, half, Gk *zoster*, belt.

Acknowledgments

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